

What is claimed is

1. An expression vector to express human follicle stimulating hormone (FSH) comprising a gene coding 5 human FSH, a promoter sequence, a polyadenylation motif sequence and a dihydrofolate reductase (DHFR) gene.
2. The expression vector as set forth in claim 1, wherein the human FSH gene consists of human FSH alpha 10 subunit gene represented by SEQ. ID. No 1, internal ribosomal entry site (IRES) sequence represented by SEQ. ID. No 7 and human FSH beta subunit gene represented by SEQ. ID. No 2.
- 15 3. The expression vector as set forth in claim 1, wherein the promoter is the promoter of early gene of cytomegalovirus (CMV) represented by SEQ. ID. No 8.
- 20 4. The expression vector as set forth in claim 1, wherein tripartite leader sequence of adenovirus represented by SEQ. ID. No 9 is additionally included.
- 25 5. The expression vector as set forth in claim 1, wherein the polyadenylation motif is a polyadenylation motif of early gene of SV40 virus, represented by SEQ.

ID. No 13, and/or a polyadenylation motif of bovine growth hormone (BGH) gene, represented by SEQ. ID. No 14.

5           6. The expression vector as set forth in claim 1, wherein the dihydrofolate reductase (DHFR) gene is a base sequence represented by SEQ. ID. No 12.

10          7. The expression vector as set forth in claim 1, wherein the vector is RC/CMV-dhfr-TPL-hFSH beta/alpha represented in FIG. 1.

15          8. A recombinant transformant mass-producing human FSH prepared by introducing the expression vector of claim 1 into host cells.

20          9. The recombinant transformant as set forth in claim 8, wherein the host cell is a CHO (Chinese hamster ovary) originated cell line (CHO/dhfr<sup>-</sup>) harboring damaged dihydrofolate reductase (DHFR) gene.

25          10. A recombinant transformant DPFC325 (Accession No: KCLRF-BP-00082) mass-producing human FSH prepared by introducing the expression vector of claim 7 into a CHO originated cell line (CHO/dhfr<sup>-</sup>).

11. A method for mass-production of human follicle stimulating hormone comprising the following steps:

- 5        1) Preparation of an expression vector containing human FSH gene;
- 2) Transfection of host cells with the expression vector of the step 1);
- 3) Selection of transformants transfected in the 10 step 2);
- 4) Selection of a recombinant transformant stably producing human FSH from the recombinant transformants selected in the step 3); and
- 5) Obtainment of human FSH from the culture of 15 the recombinant transformant selected in the step 4).

12. The method for mass-production of human follicle stimulating hormone as set forth in claim 11, wherein the expression vector of step 1) is an 20 expression vector of claim 1.

13. The method for mass-production of human follicle stimulating hormone as set forth in claim 11, wherein the host cell of step 2) is a CHO originated

cell line (CHO/dhfr<sup>-</sup>) harboring damaged dihydrofolate reductase (DHFR) gene.

14. The method for mass-production of human  
5 follicle stimulating hormone as set forth in claim 11,  
wherein the selected recombinant transformant of step  
4) is a transformant of anyone of claim 8 to 10.